

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Pete D. Vogt  
Serial No.: 10/714,026  
Examiner: John J. Tabone, Jr.  
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Group Art Unit: 2138  
Confirmation No.: 2857  
For: LANE TESTING WITH VARIABLE MAPPING  
Date: July 11, 2007

Mail Stop Appeal Brief – Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF**

In response to the Notice of Non-Compliant Appeal Brief (37 CFR 41.37) dated June 22, 2007, please amend the Appeal Brief as follows.

**Summary of Claimed Subject Matter** as required by 37 CFR 41.37(c)(1)(v) begins on page 2.

**Remarks** begin on page 4.

## SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 (from which appealed claims 2-5 and 7 depend) is drawn to a memory agent including a receive link interface, a transmit link interface, and a loop back unit coupled to the receive link interface and a transmit link interface. An example embodiment of such a memory agent is described in the substitute specification at page 35, lines 5-13 and illustrated in Fig. 32. The loop back unit may selectively redirect one or more of the receive lanes to one or more of the transmit lanes to retransmit the received training sequences as the return sequences during a lane testing operation (for example, see substitute specification, page 35, lines 10-16).

Claim 2 depends from claim 1 and is drawn to the memory agent of claim 1, further including a second transmit link interface having a plurality of second transmit links and a second receive link interface having a plurality of second receive links. Exemplary embodiments of the recited limitations are disclosed, for example, in the substitute specification at page 23, lines 18-30 and illustrated, for example, in Figure 24, where the inner port 136 of the memory agent 134 includes a receive and a transmit link interfaces 140 and 142 respectively, and lanes in the links 54A and 56B implement the recited first receive lanes and first transmit lanes respectively. And the outer port 138 includes second receive and second transmit link interfaces 144 and 146 respectively, and lanes in the links 56A and 56B implement the recited second receive lanes and second transmit lanes respectively.

Claim 3 depends from claim 2 and recites a passthrough mode during a lane testing operation by retransmitting training sequences received on the first receive link interface to the second transmit link interface, and retransmitting return sequences received on the second receive link interface to the first transmit link interface. Such a passthrough mode is disclosed in the substitute specification, for example, at page 36, lines 9-13.

Claim 4 depends from claim 1 and recites that the memory agent may selectively map one of the receive lanes to more than one of the transmit lanes during a lane testing operation. Thus, in an exemplary embodiment such as that described in page 32, lines 2-5 of the substitute specification and illustrated in Figure 32, a training sequence may make a round trip from a memory controller to the memory agent, through a loopback unit in the memory agent (as recited in claim 1), and then back to the memory controller. The loopback unit 196 of Figure 32 may selectively map one of the receive lanes (incoming lanes coupled to the receive link interface 140) to more than one of the transmit lanes (outgoing lanes coupled to the transmit link interface

142) during a lane testing operation. Note that the recited selective mapping occurs inside the memory agent 134 of Figure 32 and is performed by the loopback unit.

Claim 5 depends from claim 1 and recites that the memory agent may selectively map one or more of the first receive lanes to one or more of the second transmit lanes according to a plurality of mappings. Figure 32 (and page 35, lines 5-16 of the substitute specification) discloses an exemplary embodiment of a memory agent with receive lanes mapped to transmit lanes according to a plurality of mapping disclosed, for example, in Figure 33 and page 35, lines 20-27 of the substitute specification.

Claim 7 depends from claim 1 and recites that the memory agent may retransmit the received training sequence with modification as the return sequence. As disclosed in the substitute specification, for example page 36, lines 9-13, the memory agent may retransmit most of the training sequence as the return sequence while modifying only a small group within the sequence to provide identifying or status information to the memory host.

Claim 12 is drawn to a memory agent comprising a first link interface having a plurality of first lanes and a second link interface having a plurality of second lanes. In one embodiment, the memory agent may be a memory controller. The memory agent may transmit training sequences having different mapping indicators to one or more of the plurality of first lanes, as disclosed in the substitute specification, page 35, lines 28-29. The memory agent may receive and analyze the return sequence to identify failed bit lanes, as disclosed in the substitute specification at page 35, lines 15-17.

Claim 17 depends from claim 17 and recites a memory agent transmitting electrical stress patterns in the training sequences. Such electrical stress pattern is disclosed, for example, in the substitute specification at page 30, lines 28-30 and page 31, lines 1-3.

## REMARKS

In the Notice of Non-Compliant Appeal Brief (37 CFR 41.37) dated June 22, 2007, the appeal brief filed on May 14, 2007 is objected to for not containing a concise explanation of the subject matter defined in the appealed claims. Specifically, the Notice states that the brief must map all the appealed claims to the specification by page and line number or paragraph number and to drawings, if any, by reference characters.

“When the Office holds the brief to be defective solely due to appellant's failure to provide a summary of the claimed subject matter as required by 37 CFR 41.37(c)(1)(v), an entire new brief need not, and should not, be filed. Rather, a paper providing a summary of the claimed subject matter as required by 37 CFR 41.37(c)(1)(v) will suffice.” MPEP 1205.03(A). Accordingly, Applicant provides an amended summary of the claimed subject matter, including references to the specification by page and line number, as requested.

## CONCLUSION

Applicant requests that the appeal brief submitted earlier be considered and the rejection of claims 2-5, 7, 12 and 17 be reversed.

The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case. Applicant's representative can frequently be reached at (503) 880-3613 outside of normal office hours.

Customer No. 20575

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.

  
Joseph S. Makuch  
Reg. No. 39,286

MARGER JOHNSON & McCOLLOM, P.C.  
210 SW Morrison Street, Suite 400  
Portland, OR 97204  
(503) 222-3613